

Approve Start of Construction (CD-3)
for the
Electrical System Modifications – Phase II at BNL

Laboratory Infrastructure Division
Office of Laboratory Operations and ES&H
Office of Science

Purpose

The purpose of this paper is to document the review by the Office of Science Energy Systems Acquisition Advisory Board (ESAAB) equivalent Board for the critical decision “Approval of Start of Construction (CD-3)” for the Electrical System Modifications – Phase II project at BNL.

Background

Department of Energy Order 413.3, “Program and Project Management for the Acquisition of Capital Assets”, requires that all projects with a TEC greater than \$5M undergo this board review for all “critical decisions” during project execution.

Review Meeting

The meeting will be held on October 16, 2001 with the Associate Director, Office of Laboratory Operations and ES&H, Office of Science (SC-80) chairing the meeting. The required deliverables were provided by the Brookhaven Area Office (BAO) project manager to the Board. This summary included the following baseline ranges provided below:

Project Scope Baseline

This project is the second phase of a planned modernization and refurbishment of the Laboratory's 50 year-old deteriorating electrical infrastructure. Studies of the electrical power distribution utility by the Department of Energy's consultant engineer, Exeter Associates, Utility Site Assessment - Brookhaven National Laboratory, 1987; Carlson & Sweat Consulting Engineers, Master Electrical Plan in 1986; and Parsons Brinkerhoff, Master Electrical Plan 1994, have emphasized the vulnerability of the 13.8 and 2.4 kV distribution systems and the 480 V breaker deficiencies. All work is supported by these studies and will reduce the vulnerability of these systems to equipment failures, unplanned outages, personnel hazards and environmental releases.

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The project includes:

- Replacement of the existing 2.4 kV switchgear at Substations 616 and 617.
- Installation of 23,000 feet of new 13.8 kV cable (750 kcmil) to create a loop feed to Building 901. Install 1,500 feet of ductbank to complete the loop by extending the Brookhaven Avenue Ductbank "E" to the west.
- Replacement of approximately 13,500 feet of 2.4 kV underground feeder along Upton Road with a 750 kcmil, larger capacity feeder. New above ground switching will be added to facilitate taps to the various distribution points.
- Installation of an alternate feeder to AGS Main Magnet Power Supply (MMPS) Substation 928 and Radio Frequency Power Supply (RF) Substation 929. The new 13.8 kV cable will be 14,000 ft. of 750 kcmil and will originate from Substation 631. Prior to installing the cable, the "F" ductbank will be extended along Thomson Road, south to Rutherford Drive. Approximately 1,500 feet of 6" by 5" ductbank will be installed.
- Retrofit/recondition ten - 13.8 kV and fifty - 480 V switchgear circuit breakers.

Project Cost Baseline:

Total Project Support Costs - \$931K
Total Construction Costs - \$5,122K
Total Contingencies - \$717K
Total Estimated Cost (TEC) - \$6,770K.

Project Schedule Baseline:

The schedule is as follows:

Design Start: 2nd Quarter FY 2001
Construction Start: 2nd Quarter FY 2002
Construction Complete: 4th Quarter FY 2003

This schedule is based on receiving the following appropriations/BA funding levels:

FY 2001 \$555K
FY 2002 \$3,300K
FY 2003 \$2,915K

Baseline Change Control

See Attachment 1 for the project Baseline Change Control requirements.

Project Management Organization

See Attachment 2 for the Project Management Organization.

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Baseline Control Thresholds

Other Line Item Projects	Level 0	Level 1	Level 2
Technical Scope	N/A	Changes to scope that may impact operational functions and /or mission need requirements	Changes to baseline project scope
Schedule	N/A	3 or more months change in schedule	Changes to baseline project schedule
Cost	N/A	Any change to TEC or TPC	As defined in Project Execution Plan

LINE ITEM PROJECTS

Level 0 Changes – S-1 Level

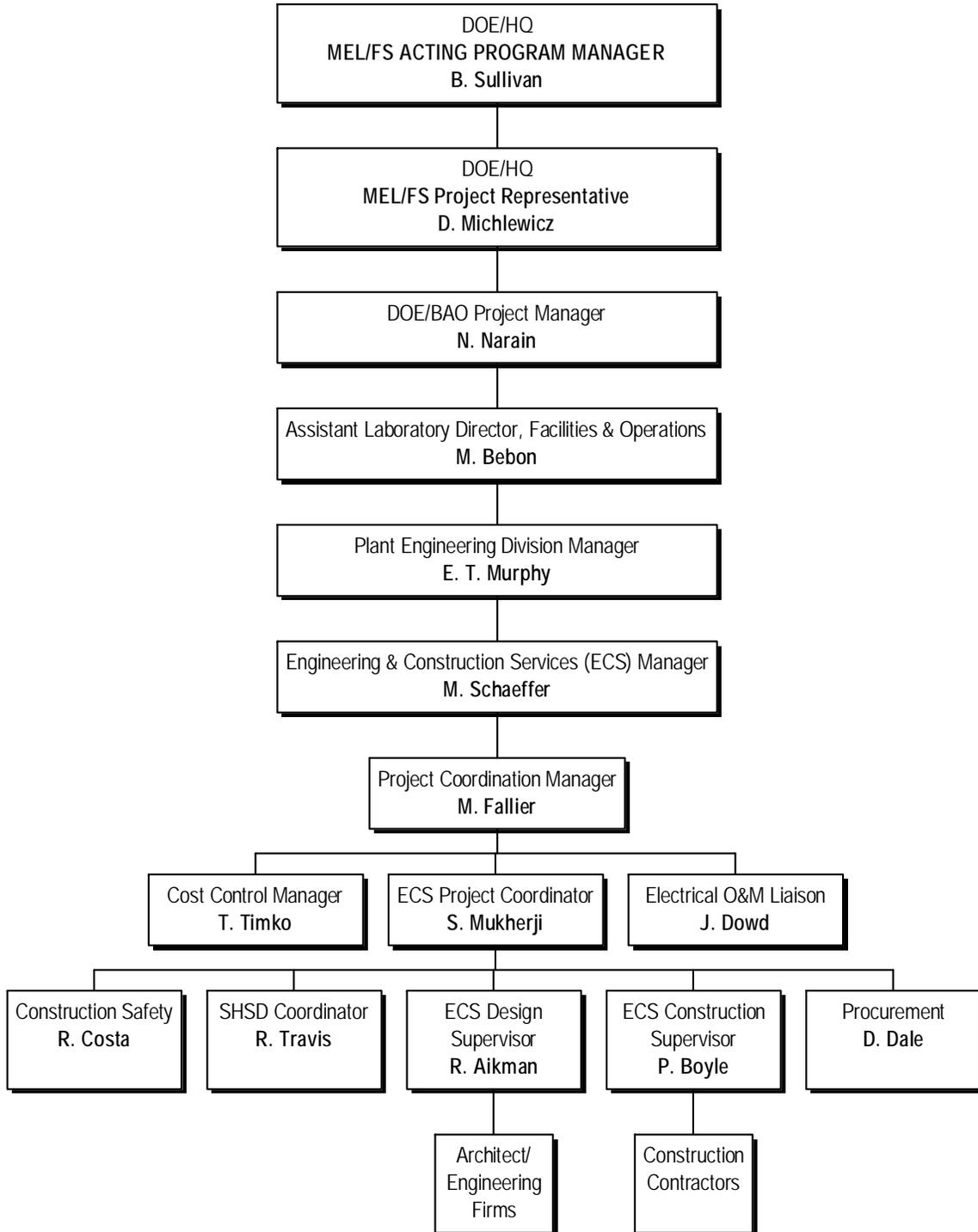
Level 1 Changes – HQ Program Element Level

Level 2 Changes – Field Element Level

Attachment 1

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Electrical System Modifications – Phase II
Project Management Organization



Attachment 2